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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/098,535	03/18/2002	Tatsuhiko Mizumasa	020348	6232

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EXAMINER

WHITMORE, STACY

ART UNIT

PAPER NUMBER

2812

DATE MAILED: 11/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/098,535		MIZUMASA, TATSUHIRO	
	Examiner		Art Unit	
	Stacy A Whitmore		2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,7-9,15 and 16 is/are rejected.
- 7) ☒ Claim(s) 2-6 and 10-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3/02</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Kumada (US Patent 6,584,608).

2. As for claims 1 and 9, AAPA disclosed the invention substantially as claimed, including a method of manufacturing a semiconductor device having first and second regions using first and second different power supply voltages wherein a first design rule is applied to the first region in accordance with the first power supply voltage [page 5 of the specification, lines 29-37].

AAPA did not specifically disclose a second design rule applied to the second region in accordance with a second power supply voltage.

Kumada disclosed a second design rule applied to the second region in accordance with a second power supply voltage [figs. 7a-7d].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of AAPA and Kumada because using Kumada's

second design rule applied to the second region in accordance with a second power supply voltage would have improved AAPA's method by allowing for possible paths of wiring for ensuring circuit design integrity [see Kumada, col. 8, lines 4-35].

3. Claims 7-8, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Kumada (US Patent 6,584,608), and further in view of Chen (US Patent 6,399,486).

4. As for claims 7-8, and 15-16, AAPA in view of Kumada disclosed the invention substantially as claimed, including the method of semiconductor design as cited in the rejection of claims 1 and 9 above.

AAPA in view of Kumada did not specifically disclose wherein the semiconductor manufacturing process employs a dual-damascene process to form metal wirings (copper) of said first and second regions.

Chen disclosed wiring wherein the semiconductor manufacturing process employs a dual-damascene process to form metal wirings (copper) of said regions [col. 5, lines 30-50].

It would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of AAPA in view of Kumada and Chen because AAPA in view of Kumada both are concerned with the design of semiconductor circuits with wiring which would benefit from Chen's dual-damascene process (copper wirings) overcoming defects in the via and trench regions the use of Chen's process, which would improve circuit design.

5. Claims 2-6, and 10-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to disclose either singularly or in combination a method of manufacturing a semiconductor wherein [claims 2 and 10], wiring intervals of first and second regions are determined by a minimum distance allowing breakdown voltage of the first and second design rules; [claims 3-4 and 11-12], a distance between two vias of first and second regions are determined by a minimum distance allowing breakdown voltage of the first and second design rules; [claims 5-6 and 13-14], a distance between adjacent wiring groove and a via of first and second regions are determined by a minimum distance allowing breakdown voltage of the first and second design rules.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stacy A Whitmore whose telephone number is (703) 305-0565. The examiner can normally be reached on Monday-Thursday, alternate Friday 6:30am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Stacy A Whitmore
Patent Examiner
Art Unit 2812



SAW